

CLAIMS

1. A transport tray for a coiled fiber including at least one coil of fiber, the transport tray comprising:

a base; and

a circular receptacle disposed on the base that is constructed and arranged to receive the at least one coil of fiber therein, the receptacle including an upstanding wall having at least one opening therein to allow an end portion of the fiber to extend from the receptacle.

2. The transport tray as claimed in claim 1, wherein the circular receptacle has a diameter that is sized to maintain the at least one coil of fiber at a coil diameter that is greater than a minimum bend radius of the fiber.

3. The transport tray as claimed in claim 1, further comprising at least one retainer disposed on the base, the at least one retainer being constructed and arranged to secure the end portion of the fiber to the base at a predetermined location.

4. The transport tray as claimed in claim 3, wherein the at least one retainer is constructed and arranged to secure fibers having any one of a range of diameters.

5. The transport tray as claimed in claim 3, further comprising an aperture formed in the base and located proximate to the at least one retainer such that an end of the fiber extending beyond the retainer overlies the aperture.

6. The transport tray as claimed in claim 5, further comprising at least one fiber end retainer to secure the end of the fiber, the fiber end retainer being supported by the base over the aperture.

7. The transport tray as claimed in claim 6, wherein end of the fiber has one of at least two different shapes, the fiber end retainer including at least first and second fiber end retainers interchangeably supported by the base, the first fiber end retainer being adapted to

secure the end of the fiber having a first shape and the second fiber end retainer being adapted to secure the end of the fiber having a second shape.

8. The transport tray as claimed in claim 1, further comprising a locking mechanism supported on the base to retain the coiled fiber within the receptacle, the locking mechanism being movable between an open position and a closed position.

9. The transport tray as claimed in claim 8, wherein the locking mechanism is adapted to be moved between the open and closed positions by an axially directed force with respect to the receptacle.

10. The transport tray as claimed in claim 8, wherein the locking mechanism comprises at least one latch adapted to engage an inner surface of the upstanding wall.

11. The transport tray as claimed in claim 8, further comprising at least one registration feature located within the circular receptacle and adapted to mate with a corresponding feature to position the receptacle in a predetermined location to receive the coiled fiber in the receptacle.

12. A transport tray for a coiled fiber including at least one coil of fiber, the transport tray comprising:

a base constructed and arranged to support the coiled fiber thereon; and  
at least one lock supported on the base to retain the coiled fiber thereon, the at least one lock being operable between a locking position to retain the at least one coil of fiber on the base and an unlocking position to release the at least one coil of fiber from the base.

13. The transport tray as claimed in claim 12, wherein the lock comprises a plurality of latches movably supported on the base.

14. The transport tray as claimed in claim 13, further comprising a coil containment feature disposed on the base, the coil containment feature including an upstanding wall to provide a containment recess, the coil of fiber being supported in the containment recess.

5 15. The transport tray as claimed in claim 14, wherein each of the plurality of latches overlies the recess and engages an inner surface of the upstanding wall.

10 16. The transport tray as claimed in claim 14, wherein each of the plurality of latches comprises a nose portion, the inner surface of the upstanding wall having a plurality of depressions configured to receive the nose portion of each latch.

17. The transport tray as claimed in claim 14, wherein the upstanding wall comprises at least one opening therein to allow an end portion of the fiber to protrude from the containment recess.

18. The transport tray as claimed in claim 13, wherein each of the plurality of latches comprises a camming surface configured to receive pressure from at least one of an operator and a piece of equipment, to rotate the latch into the unlocking position.

20 19. The transport tray as claimed in claim 12, wherein the at least one latch is biased toward the locking position.

25 20. The transport tray as claimed in claim 12, further comprising at least one retainer disposed on the base, the at least one retainer being constructed and arranged to secure the end portion of the fiber to the base at a predetermined location.

21. The transport tray as claimed in claim 20, wherein the at least one retainer is constructed and arranged to secure fibers having any one of a range of diameters.

30 22. The transport tray as claimed in claim 20, wherein the at least one retainer comprises:

a first retainer supported on the base that is constructed and arranged to maintain the end portion of the fiber in a first orientation relative to the base; and

a second retainer supported on the base that is constructed and arranged to maintain the end portion of the fiber in a second orientation relative to the base, the second orientation being different from the first orientation.

23. A transport tray for a coiled fiber including at least one coil of fiber, the transport tray comprising:

a base constructed and arranged to support the at least one coil of fiber thereon in a predetermined location;

a first retainer supported on the base that is constructed and arranged to maintain an end portion of the coiled fiber in a first orientation relative to the base; and

a second retainer supported on the base that is constructed and arranged to maintain the end portion of the coiled fiber in a second orientation relative to the base that is different from the first orientation.

24. The transport tray as claimed in claim 23, wherein the first retainer is adapted to maintain the end portion of the fiber such that the end portion extends beyond the base, and wherein the second retainer is adapted to maintain the end portion of the fiber such that the end portion is contained within the outer perimeter of the base.

25. The transport tray as claimed in claim 24, wherein the base has an aperture disposed proximate to the second retainer, the aperture being configured such that the end portion of the fiber extends beyond the second retainer to overlie the aperture.

26. The transport tray as claimed in claim 25, further comprising at least one fiber end retainer disposed on the base of the tray, the at least one fiber end retainer being disposed over the aperture and being adapted to secure the end portion of the fiber.

27. The transport tray as claimed in claim 26, wherein the at least one fiber end retainer includes first and second interchangeable fiber end retainers, the first fiber end retainer

being constructed and arranged to secure the end portion of the coiled fiber to the base when the end portion has a first shape, the second fiber end retainer being constructed and arranged to secure the end portion of the fiber to the base when the end portion has a second shape.

5           28.     The transport tray as claimed in claim 23, wherein the first retainer and the second retainer are each configured to hold a fiber having any one of a range of diameters.

10           29.     The transport tray as claimed in claim 28, wherein at least one of the first retainer and the second retainer comprises a tapered notch disposed between a pair of posts, the notch having opposing sidewalls that converge toward each other from a top end of the posts toward a bottom end of the posts.

15           30.     The transport tray as claimed in claim 29, wherein the posts and the notch are integrally formed with the base of the tray.

20           31.     The transport tray as claimed in claim 23, wherein the base includes a coil containment feature that is constructed and arranged to support the at least one coil of fiber therein.

25           32.     The transport tray as claimed in claim 31, further comprising a locking mechanism constructed and arranged to retain the coiled fiber in the coil containment feature.

30           33.     A transport tray for a coiled fiber having one of a range of diameters, the coiled fiber including at least one coil of fiber and an end portion extending therefrom, the transport tray comprising:

          a base constructed and arranged to support the at least one coil of fiber thereon;

and

          at least one retainer, disposed on the base, that is constructed and arranged to secure the end portion of the fiber to the base at a predetermined location, the at least one retainer being constructed and arranged to secure fibers having any one of the range of diameters.

34. The transport tray as claimed in claim 33, wherein the at least one retainer includes a tapered notch.

35. The transport tray as claimed in claim 34, wherein the at least one retainer is integrally formed with the base of the tray.

36. The transport tray as claimed in claim 34, wherein the notch has a non-uniform taper.

37. The transport tray as claimed in claim 33, wherein the base includes a coil containment feature constructed and arranged to support the at least one coil of fiber.

38. The transport tray as claimed in claim 37, further comprising a locking mechanism constructed and arranged to retain the coiled fiber in the coil containment feature.

39. The transport tray as claimed in claim 37, further comprising at least one registration feature disposed within the coil containment feature, the at least one registration feature being adapted to mate with a corresponding feature on a fiber dispensing tool to align the coil containment feature with the fiber dispensing tool.

40. A transport tray for a coiled fiber including at least one coil of fiber and an end portion extending therefrom having one of a first shape and a second shape that differ from each other, the transport tray comprising:

a base constructed and arranged to support the at least one coil of fiber; and  
first and second retainers interchangeably supported by the base, the first retainer being constructed and arranged to secure the end portion of the coiled fiber to the base when the end portion has the first shape, the second retainer being constructed and arranged to secure the end portion of the fiber to the base when the end portion has the second shape.

41. The transport tray as claimed in claim 40, wherein the base includes a receptacle constructed and arranged to hold the at least one coil of fiber therein.

42. The transport tray as claimed in claim 41, wherein the receptacle has a circular shape.

43. The transport tray as claimed in claim 41, further comprising a locking mechanism constructed and arranged to secure the at least one coil of fiber in the receptacle.

44. The transport tray as claimed in claim 43, wherein the locking mechanism includes a plurality of latches movably supported by the base between an open position and a closed position to secure the at least one coil of fiber.

45. The transport tray as claimed in claim 44, wherein each of the plurality of latches is biased toward the closed position.

46. The transport tray as claimed in claim 44, wherein the receptacle includes an upstanding wall, each of the plurality of latches engaging the wall in the closed position.

47. The transport tray as claimed in claim 42, wherein the receptacle has an annular recess adapted to receive the at least one coil of fiber.

48. A transport tray for carrying a coiled fiber including at least one coil of fiber, the transport tray comprising:

a base including a receptacle that is constructed and arranged to retain the at least one coil of fiber on the base; and

at least one registration feature disposed within the receptacle, the at least one registration feature being constructed and arranged to mate with a corresponding feature to position the base in a predetermined location to receive the coiled fiber in the receptacle.

49. The transport tray as claimed in claim 48, wherein the at least one registration feature includes a plurality of registration features disposed within the receptacle.

50. The transport tray as claimed in claim 49, wherein each of the plurality of registration features has a funnel shape and is adapted to mate with corresponding pins on a tool that dispenses the fiber into the receptacle.

51. The transport tray as claimed in claim 48, wherein the at least one registration feature is constructed and arranged to mate with a transportation device.

52. The transport tray as claimed in claim 51, wherein the at least one additional registration feature includes a pair of registration holes located at one end of the base and an elongated slot located at an opposing end of the tray.

53. The transport tray as claimed in claim 48, further comprising a locking mechanism constructed and arranged to secure the at least one coil of fiber in the receptacle.

54. The transport tray as claimed in claim 48, further comprising at least one retainer that is constructed and arranged to secure an end portion of the coiled fiber extending from the receptacle.

55. The transport tray as claimed in claim 54, wherein the at least one retainer includes at least two retainers interchangeably supported on the base.